

MATH1052A — Calculus and Introductory Analysis I

Fall 2021, Carleton University

Professor: Charles Starling
Office: 4215 Herzberg Laboratories
Email: cstar@math.carleton.ca
Office Hours: To be determined.

This course is **blended**, which means there are some synchronous components and some asynchronous components.

I will be posting everything on Brightspace. In this course, you are expected to check Brightspace and your Carleton email address regularly.

Prerequisite: Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005 and MATH 0006 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.

Lectures: Lectures will be prerecorded and available on Brightspace. The number of videos each week may vary.

Office Hours: Office hours are online, and will be conducted on Zoom. I will post office hours shortly after the semester begins. Since lectures are recorded videos, Office Hours are your main opportunity to talk to me, and I heavily encourage you to come to them. TAs will also hold office hours.

Tutorial: Thursdays 4:05 pm–5:25 pm. TAs will present worked out solutions to problems relating to the lectures and assignments. Two tutorials will be held online (live) and one will be held in person. When you registered for this course you chose either to have your tutorial online or in person. If you chose online, you are **not allowed** to attend the in-person tutorial.

Assignments: You will have an assignment due roughly every second Monday, on the dates listed below (the second assignment is due on Tuesday instead, because the Thanksgiving holiday falls on Monday the 11th). Assignments are to be submitted in pdf format on Brightspace. There will be information on Brightspace on how to create a pdf scan of your written assignments from your smartphone.

Quizzes: You will have a quiz every other Monday, on the dates listed below. **Once you start a quiz you have only 40 minutes to complete it.** Quizzes will be available for a 24 hour period. These quizzes are also to be written and submitted in pdf format.

Evaluation:

Assignments	30%	Sep 27, Oct 12, Nov 1, Nov 15, Nov 29
Quizzes	45%	Oct 4, Nov 8, Nov 22, Dec 6
Final Exam	25%	December exam period

Text: *Elementary Analysis* (second edition) by Kenneth A. Ross. This textbook appears to be available to download through the Carleton library. Log in to library.carleton.ca and search for either the title or the author, and it should be available for download. If you have any problems with this, let me know.

Course content: Properties of the real numbers. Limits. Sequences and series. Elementary functions. Continuity. Derivatives. Extreme values. Mean Value Theorem. L'Hospital's rules. Antiderivatives. An emphasis is placed on proofs and theory.

We will be covering sections 3–5, 7–11, 14, 17–20, 28–30 from the textbook.

Help: This is Honours Calculus, and is a challenging course. The following resources are available to you for extra help.

- **The Math Tutorial Centre (MTC):** The MTC is a study space for any student who wishes to study mathematics or statistics individually or in group while receiving support from a teaching assistant. Note that it can get very busy during midterm/exam period.

The MTC will operate online (on Brightspace) in the Fall semester. See <https://carleton.ca/math/math-tutorial-centre/> for more details.

- **Mathematics and Statistics Learning Assistance Program (MS-LAP):** MS-LAP supports first year mathematics and statistics courses. This free of charge program helps students in achieving their goals. It provides learning support and solutions to homework questions through assistance videos. These services are available on Brightspace.

MS-LAP gives students tools to succeed while explaining step-by-step particular problem strategies and associated theory. The program is for anyone who wants to deepen their understanding at their own pace.

- **Problem solving sessions:** In addition to your usual tutorials, there are extra problem solving sessions offered for the Honours courses 1052/1152. The dates and times of these are to be announced.

For more information about any of the above, contact Kyle Harvey kyle.harvey@carleton.ca

Academic Accommodation: Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Students must confirm their need for accommodation with the Instructor no later than one week before the first quiz. If students require special arrangements to meet their academic obligations, please review the course outline and write me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

Pregnancy or Religious Obligation: Please email me requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the Student Guide.

Notes:

- You are expected to attend all tutorials, but your attendance is not recorded.
- Students who miss the final exam may be eligible for a deferral. Application for a deferral must be made, with appropriate documentation, to the Registrar's Office within five business days of the examination.
- For all your graded work, I reserve the right to request a meeting with you over Zoom or similar to discuss your solutions. Refusing such a meeting will result in a grade of 0 for that item.

MATH2052A—Calculus and Introductory Analysis II

Winter 2021, Carleton University

Professor: Charles Starling
Office: 4215 Herzberg Laboratories
Email: cstar@math.carleton.ca
Office Hours: To be determined.

This course is **blended**, which means there are some synchronous components and some asynchronous components.

I will be posting everything on Brightspace. In this course, you are expected to check it and your Carleton email address regularly.

Prerequisite: Prerequisite(s): (i) MATH1052 with a grade of C- or higher or (MATH1007 or MATH1004 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.

Lectures: Lectures will be prerecorded and available on Brightspace. The number of videos each week may vary.

Office Hours: Office hours are online, and will be conducted on Big Blue Button through Brightspace. I will post office hours shortly after the semester begins. Since lectures are recorded videos, Office Hours are your main opportunity to talk to me, and I heavily encourage you to come to them.

Tutorial: Tuesdays 1:05 pm - 2:25 pm. TAs will present worked out solutions to problems relating to the lectures and assignments. The tutorials will take place over Big Blue Button.

Assignments: You will have an assignment due every second Thursday, except the week before reading break, on the dates listed below. Assignments are to be submitted in pdf format on Brightspace. There will be information on Brightspace on how to scan your written assignments from your smartphone.

Quizzes: You will have a quiz every other Thursday, on the dates listed below. **Once you start a quiz you have only 40 minutes to complete it.** Quizzes will be available for a 24 hour period. These quizzes are also to be written and submitted in pdf format.

Evaluation:

Assignments	35%	Jan 27, Feb 10, Mar 3, Mar 17, Mar 31
Quizzes	35%	Feb 3, Mar 10, Mar 24
Final Exam	30%	April exam period

Text: *Elementary Analysis* (second edition) by Kenneth A. Ross. This textbook appears to be available to download through the Carleton library. Log in to library.carleton.ca and search for either the title or the author, and it should be available for download. If you have any problems with this, let me know.

Course content: Definite, indefinite integrals. Improper integrals. The fundamental theorem of calculus. An introduction to differential equations. Sequences and series of functions. Power series. Taylors formulae. Uniform convergence. An emphasis is placed on proofs and theory.

We will be covering sections Sections 32–34, 36, 15, 23, 37, 24–26, 31 from the textbook.

Help: This is Honours Calculus, and is a challenging course. The following resources are available to you for extra help.

- **The Math Tutorial Centre (MTC):** The MTC is a study space for any student who wishes to study mathematics or statistics individually or in group while receiving support from a teaching assistant. Note that it can get very busy during midterm/exam period.

It seems likely that the MTC will operate online (on Brightspace) in the Winter semester. See <https://carleton.ca/math/math-tutorial-centre/> for more details.

- **Mathematics and Statistics Learning Assistance Program (MS-LAP):** MS-LAP supports first year mathematics and statistics courses. This free of charge program helps students in achieving their goals. It provides learning support and solutions to homework questions through assistance videos. These services are available on Brightspace.

MS-LAP gives students tools to succeed while explaining step-by-step particular problem strategies and associated theory. The program is for anyone who wants to deepen their understanding at their own pace.

- **Problem solving sessions:** In addition to your usual tutorials, there are extra problem solving sessions offered for the Honours courses 2052/2152. The dates and times of these are to be announced.

For more information about any of the above, contact Kyle Harvey kyle.harvey@carleton.ca

Academic Accommodation: Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Students must confirm their need for accommodation with the Instructor no later than one week before the first quiz. If students require special arrangements to meet their academic obligations, please review the course outline and write me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

Pregnancy or Religious Obligation: Please email me requests for academic accommodation as soon as possible after the need for accommodation is known to exist. For more details, see the Student Guide.

Notes:

- You are expected to attend all tutorials, but attendance is not taken.
- Students who miss the final exam may be eligible for a deferral. Application for a deferral must be made, with appropriate documentation, to the Registrar's Office within five business days of the examination.
- Quizzes and the exam will be open book, meaning that you can use any course material while writing them. However, you are **not allowed to use question-solving websites like Chegg or Course Hero**. Use of such websites is academic fraud, and can carry stiff penalties. You are also **not allowed to collaborate with others on Quizzes or the Final Exam**.
- For all your graded work, I reserve the right to request a meeting with you over Zoom or Big Blue Button to discuss your solutions. Refusing such a meeting will result in a grade of 0 for that item.